

Notice of Allowability

Application No.

09/669,382

Examiner

Jeffrey R. West

Applicant(s)

LYNAUGH ET AL.

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the After Final Response filed on February 05, 2004.
2. ☒ The allowed claim(s) is/are 1,5-7,10-13,22,23 and 25-54.
3. ☒ The drawings filed on 26 September 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Steven L. Nichols on March 16, 2004.
3. The application has been amended as follows:
 - In claim 1, line 12, "and" has been deleted.
 - In claim 1, line 13, "modem." has been changed to ---modem; and---.
 - In claim 1, after line 13, ---obtaining an estimated input power using a current input frequency and an interpolated accumulated error value that is closest to a current accumulated error value as inputs to said look-up table--- has been added.
 - Claim 2 has been cancelled.
 - In claim 54, line 12, "and" has been deleted.
 - In claim 54, line 13, "modem." has been changed to ---modem; and---.
 - In claim 54, after line 13, ---obtaining an estimated input power using a current input frequency and an interpolated accumulated error value that is closest to a current accumulated error value as inputs to said look-up table--- has been added.

Allowable Subject Matter

4. The following is an examiner's statement of reasons for allowance:

U.S. Patent No. 6,131,023 to Matsuura teaches a set-top cable modem device including a cable modem comprising a receiver unit, tuner, and automatic gain control circuit (column 5, line 66 to column 6, line 6 and column 6, lines 4-29). Matsuura also teaches, in operation, using an analog IF signal and a baseband signal for demodulating a received signal wherein the automatic gain control circuit is controlled by the demodulation operation (column 8, lines 45-58) according to the input level of the QAM input signal supplied to the automatic gain control circuit (column 11, lines 50-55).

U.S. Patent No. 5,452,473 to Weiland et al. teaches reverse link, transmit power correction and limitation in a radiotelephone system comprising a receiver that includes a linearizer table (i.e. look-up table) stored in the device that, during factory calibration, receives and stores a plurality of calibration signals having known frequencies, input RF power values, and error control values for use in actual operation (column 3, lines 46-65) wherein the error values are determined by an automatic gain control circuit (column 3, line 66 to column 4, line 5). Weiland also teaches using the linearizer look-up table, containing the aforementioned frequency and power parameters, to obtain correct input power adjustments required for the radio receiver's demodulation operation (column 3, lines 26-40).

U.S. Patent No. 5,469,115 to Peterzell et al. teaches a method and apparatus for automatic gain control in a digital receiver wherein the automatic gain control apparatus includes a saturating integrator that compares a received power signal to a reference signal and produces the gain control signal by integrating or by refraining from integration based upon the reference values (column 2, lines 37-49) wherein the integrator includes an error accumulator (column 10, lines 11-21).

U.S. Patent No. 6,285,960 to Fung et al. teaches a method and apparatus for a router line card with adaptive selectable gain control for use in a cable environment (column 5, lines 31-35) wherein actual calibration data is stored a memory along with a nominal adjustment value and non-nominal adjustment values are interpolated and extrapolated using each of the known nominal adjustment values (column 2, lines 45-67).

As noted above, while the inventions of Matsuura, Weiland, Peterzell, and Fung teach many of the features of the claimed invention, none of the cited prior art teaches or suggests, in combination with the other claimed limitations for estimating the input power in a cable modem device having a tuner and a modem, interpolating the frequency, input power, and accumulated error values using an audio tone or a known voltage variable amplifier curve. Further, none of the cited prior art teaches or suggests, in combination with the other claimed limitations for estimating the input power in a cable modem device having a tuner and a modem, obtaining an estimated input power using a current input frequency and an interpolated

accumulated error value that is closest to a current accumulated error value as inputs to a look-up table, wherein the look-up table comprises an interpolated accumulated error value for each of a desired set of estimated input power levels and input frequencies.

The following cited prior art are considered to be pertinent to the examination of the application:

U.S. Patent No. 5,048,054 to Eyuboglu et al. teaches a line probing modem that uses a calculated input power, as reflected by an AGC setting, and a user-defined error performance requirement, to determine a maximum baud rate for the modem, but does not teach, in combination with the other claimed limitations for estimating the input power in a cable modem device having a tuner and a modem, obtaining an estimated input power using a current input frequency and an interpolated accumulated error value that is closest to a current accumulated error value as inputs to a look-up table, wherein the look-up table comprises an interpolated accumulated error value for each of a desired set of estimated input power levels and input frequencies.

U.S. Patent No. 4,531,089 to Ishizuka et al. teaches an electric power detecting circuit and gain control circuit that estimates an input power to the modem using a gain amplifier and an automatic gain controller setting, but does not teach, in combination with the other claimed limitations for estimating the input power in a cable modem device having a tuner and a modem, obtaining an estimated input

power using a current input frequency and an interpolated accumulated error value that is closest to a current accumulated error value as inputs to a look-up table, wherein the look-up table comprises an interpolated accumulated error value for each of a desired set of estimated input power levels and input frequencies.

IBM Technical Disclosure No. NN9312505 teaches a power estimator for automatic gain control comprising determining an input power using a power estimator and initializing AGC gain parameters corresponding to the input power using a logarithmic table lookup procedure, but does not teach, in combination with the other claimed limitations for estimating the input power in a cable modem device having a tuner and a modem, obtaining an estimated input power using a current input frequency and an interpolated accumulated error value that is closest to a current accumulated error value as inputs to a look-up table, wherein the look-up table comprises an interpolated accumulated error value for each of a desired set of estimated input power levels and input frequencies.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jrw
March 18, 2004


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